

NAME: Generic / TRADE	RECEPTOR AFFINITY	SIDE EFFECTS			COMMENTS & Additional Uses		INITIAL & MAX. DOSE	USUAL ADULT DOSE RANGE	\$ per MONTH
ACH.	SED.	OTHER							
Citalopram CELEXA (20, 40mg tab) abr= C	5HT SELECTIVE SSRI's	+	+	SSRIs SE in General nausea {21%(F) - 36% (X)}, anxiety, insomnia {~14%}, agitation, anorexia, tremor somnia {11-26%}, sweating, dry mouth, headache, dizziness, diarrhea {12% (F,P)-17% (S)}, constipation {13-18%} sexual dysfx. ^{42,43}	•avoid in pts prone to overdose •fewer CYP ₄₅₀ DI's of SSRIs	Therapeutic Uses: √ OCD (esp. F, X, P) √ Panic (esp. P,S) √ Anxiety (all) √ Bulimia nervosa (F) √ Pain syndromes √ diabetic neurop. (C) to deter use of EtOH	20mg am 60mg/d	20mg po od 40mg po od	52.00 52.00
Fluoxetine PROZAC (10,20mg cap & 4mg/ml solution) abr= F		0	0		•most anorexia & stimulating •long half-life (5 wk washout) •60mg weekly maintenance? ⁴⁴		10-20mg od 80mg/d	(10mg po od)† 20mg po od am 40mg po od am	27.00 20.00 31.00
Fluvoxamine LUVOX (50,100mg tab) abr= X		0/+	++		•most nauseating, constipating & sedating of the SSRI's		25-50mg hs 300mg/d	100mg po hs 150mg po hs 50am & 150hs	39.00 55.00 71.00
Paroxetine PAXIL (20,30mg tab) abr= P		+	+		•most anticholinergic of SSRIs	•flat dose response curve (majority of patients responding do so at the lowest effective dose)	10-20mg am 50mg/d	20mg po od am 30mg po od am 40mg po od am	64.00 68.00 121.00
Sertraline ZOLOFT (25,50,100mg cap) abr= S		0	+		•most diarrhea & male sexual dysfx of SSRIs •fewer CYP ₄₅₀ DI's of SSRIs ⁴⁵		25-50mg am 200mg/d	100mg po od cc 50mg am & 100mg pm 100mg po bid cc	51.00 97.00 95.00
Nefazodone SERZONE (100,150,200mg tab) abr= Z	5HT Selective SSRI+5HT ₂ rec. antagonism	+	+++	As for SSRIs +: ↓ BP (nausea, dizziness, constipation)	•least stimulating serotonergic •no wt gain; less sex dysfx., DI's •may try entire dose at hs ⁴⁶	•useful in anxiety & insomnia	50-100mg bid 600mg/d	100mg po bid 150mg po bid (300mg po hs)	64.00 64.00 64.00
Trazodone DESYREL (50,100mg tab) (150mg Dividose tab:50/75/100/150mg ✕)		0	++++	↓↓ BP, dizzy, headache, nausea; (α ₁ blockade); priapism 1/6000, (Tx epi)	√dementia 50mg hs (insomnia, sundowning, aggression); less cardiac effects than TCAs	√ Panic, chr. pain √ Sleep disorders: 50-100mg hs	50mg bid 600mg/d	50mg po hs 100mg po bid pc 200mg po bid pc	12.00 22.00 36.00
Amitriptyline ELAVIL (10, 25, 50mg tab)	5HT & NE EFFECTS tertiary (3°) amine TCA's (not all-inclusive listing)	++++	++++	General TCA SE: ↑HR, ↓BP (Tx: fluid+/- Florinef), weight gain, sexual dysfx, sweating, rash, tremors, ECG abnormalities, seizures •fatal in overdose due to cardiac & neurologic toxicity. •2° amines generally better tolerated than 3° amines	•10-30mg hs for sleep disorders & chronic pain •Cp	Therapeutic Uses √ Pain Syndromes & sleep disorders ⁴⁷ (esp. amitriptyline; but 2° TCAs also useful and may be better tolerated)	10-25mg hs 300mg/d	50 mg po hs 200mg po hs	8.00 11.00
Clomipramine ANAFRANIL (10, 25, 50mg tab)		++++	++++		•especially effective for OCD •Most serotonergic TCA; •Cp •higher risk of seizures		10-25mg hs 300mg/d	50 mg po hs 150mg po hs 200mg po hs	15.00 29.00 36.00
Doxepin SINEQUAN (10,25,50,75,100,150mg cap)		+++	++++		•Most histamine block; •Cp •√psychoneurotic/anxious dep.		10-25mg hs 300mg/d	50 mg po hs 200mg po hs	15.00 24.00
Imipramine TOFRANIL (10, 25, 50mg tab)		+++	+++		•Cp √ Childhood enuresis (age 6+)	√ Neuropathy √ Agitation & insomnia	10-25mg hs 300mg/d	50 mg po hs 150mg po hs 200mg po hs	8.00 10.00 11.00
Desipramine NORPRAMIN (10, 25, 50, 75,100mg tab) (50mg tabs better price in SK)	NE > 5HT secondary (2°) amine TCA's (not all inclusive list)	++	++		•Most NE activity •Least ACH side effects •Cp	√ Panic √ Migraine prophylaxis ⁴⁸ (esp. amitriptyline, nortriptyline)	10-25mg hs 300mg/d	50 mg po hs 150mg po hs (3x50mg) 200mg po hs (4x50mg)	15.00 26.00 33.00
Nortriptyline AVENTYL (10, 25mg cap)		+++	++		•Least hypotensive TCA •Cp (response rate higher at lower end of usual range ⁴⁹)	√ ADD (esp. desipramine)	10mg hs 150mg/d	25mg po hs 50mg po hs 100mg po hs	17.00 25.00 43.00
Venlafaxine EFFEXOR (Reg. 37.5, 75mg reg.) (XR 37.5mg, 75mg, 150mg caps) (contents of XR caps may be sprinkled)	SNRI 5HT & NE (also some DA)	+	+	•As dose ↑: ↑BP, agitation, tremor, sweating, nausea {~37%}, sleep disturbances •caution: withdrawal effects	•initial nausea; "clean TCA" •side effects similar to SSRIs; •no wt. gain; less sexual dysfx. •adjust dose for ↓ renal fx	√Generalized anxiety Useful BPAD	18.75-37.5mg bid 375mg/d	37.5mg po bid cc 75mg po bid cc 75mg XR po daily 150mg XR po daily 225mg XR po daily	63.00 119.00 6300 66.00 129.00
Bupropion SR WELLBUTRIN (100mg, 150mg tab) ☞	DA & NE	0	0	agitation/insomnia/tremor, ↓appetite, GI upset, psychos.	•highest risk of seizures (~0.4%) •risk of abuse/dependence?	=ZYBAN®→D/C smoking, √ BPAD	100mg od am 450mg/d	100mg po bid 150mg po bid	45.00 64.00
MAOIs: non-selective & irreversible; ✓ atypical/refractory depression; enzyme effect ~10days; many DI's and food cautions (tyramine-hypertensive crisis risk)!; phenelzine <i>NARDIL</i> 15mg tab; tranylcypromine <i>PARNATE</i> 10mg tab									
Moclobemide MANERIX (100,150,300mg tab)	RIMA Selective & Reversible	+	0	Dry mouth, dizzy, headache, nausea, restless, tremor	•no dietary tyramine precaution •enzyme effect lasts ~24hrs	√Atypical, √Anxious-phobic, √Co-morbid anxiety	100mg bid 900mg/d	150mg po bid pc 300mg am&150pm pc 300mg po bid pc	33.00 46.00 64.00

ACH = anticholinergic effects (dry mouth, constipation, urinary hesitancy, blurred vision); SED =sedation; 5HT =serotonin; NE =norepinephrine; DA =dopamine; TCA = tricyclic antidepressant; SSRI = selective 5HT reuptake inhibitor;

MAOI = monoamine oxidase inhibitors; RIMA reversible inhibitor of MAO-A. Cp = plasma levels avail.; \$ = cost to patient in Saskatchewan for 30 days medication (includes markup & dispensing fee); OCD = obsessive compulsive disorder;

ADD = attention deficit disorder; wt = weight; wk = week; Tx = treatment; SE = side effects; BP = blood pressure; HR = heart rate; GI = gastro-intestinal; epi = epinephrine; DI = drug interactions;

☞ =EDS, ✕ = non-formulary in SK.; INITIAL DOSE - Lower initial doses are recommended for elderly patients, and those likely to be more sensitive to adverse effects. † = initial or maintenance dose lower than the usual effective dose

Side effects of antidepressant medications

Drug	Anticholinergic	Drowsiness	Insomnia/agitation	Orthostatic hypotension	QTc prolongation*	Gastrointestinal toxicity	Weight gain	Sexual dysfunction
Selective serotonin reuptake inhibitors (SSRIs) *								
Citalopram	0	0	1+	1+	1+ ^Δ	1+ (all SSRIs: see*)	1+	3+
Escitalopram	0	0	1+	1+	1+	1+	1+	3+
Fluoxetine	0	0	2+	1+	1+	1+	1+	3+
Fluvoxamine	0	1+	1+	1+	0 to 1+	1+	1+	3+
Paroxetine	1+	1+	1+	2+	0 to 1+	1+	2+	4+
Sertraline	0	0	2+	1+	0 to 1+	2+ [◇]	1+	3+
Atypical agents								
Agomelatine [§] (not available in United States)	0	1+	1+	0	0	1+	0	0 to 1+
Bupropion	0	0	2+ (immediate release) 1+ (sustained release)	0	1+	1+	0	0
Mirtazapine	1+	4+	0	0	1+	0	4+	1+
Serotonin-norepinephrine reuptake inhibitors (SNRIs) *								
Desvenlafaxine [¥]	0	1+	2+	0	0	2+ (initially)* 1+ (after 1 week)	0	3+
Duloxetine	0	0	2+	0	0	2+*	0	3+
Milnacipran [¥]	1+	1+	0	0	0	2+*	0	0
Venlafaxine [¥]	0	1+	2+	0	1+	2+ (immediate release)* 1+ (extended release)*	0	3+
Serotonin modulators								
Trazodone	0	4+	0	1+ (hypnotic dose) 3+ (antidepressant dose)	1+ (hypnotic dose) 2+ (antidepressant dose)	1+ (hypnotic dose) 3+ (antidepressant dose)	0 (hypnotic dose) 1+ (antidepressant dose)	1+ [‡]
Vilazodone	0	0	2+	0	0	4+ [†]	0	2+
Nefazodone**	1+	2+	0	1+	0	2+	0	0
Tricyclic and tetracyclic antidepressants (TCAs) **								
Amitriptyline	4+	4+	0	3+	3+	1+ (all TCAs see**)	4+	3 to 4+
Amoxapine	2+	2+	2+	2+	2+	0	2+	ND
Clomipramine	4+	4+	1+	2+	2+	1+	4+	4+
Desipramine	1+	4+	1+	2+	3+	0	1+	ND
Doxepin	3+	3+	0	2+	3+	0	4+	3+
Imipramine	3+	3+	1+	4+	3+	1+	4+	3+
Maprotiline	2+	3+	0	2+	3+	0	2+	ND
Nortriptyline	2+	2+	0	1+	3+	0	1+	ND
Protriptyline	2+	1+	1+	2+	3+	1+	1+	3 to 4+
Trimipramine	4+	4+	1+	3+	1+	0	4+	ND
Monoamine oxidase inhibitors								
Isocarboxazid	1+	1+	2+	2+	0	1+	1+	4+
Phenelzine	1+	2+	1+	3+	0	1+	2+	4+
Selegiline	1+	0	1+	1+	0	0	0	0
Tranylcypromine	1+	1+	2+	2+	0	1+	1+	4+

Scale: 0 = none; 1+ = slight; 2+ = low; 3+ = moderate; 4+ = high; ND = inadequate data.

* Risk of QTc prolongation or torsades de pointes is also elevated with advanced age, female sex, heart disease, congenital long QT syndrome, hypokalemia or hypomagnesemia, elevated serum drug concentrations (eg, drug overdose, interacting drugs, organ failure) and combination of drugs with QTc prolonging effects. Refer to topic on acquired long QT syndrome.

• All SSRIs and SNRIs are associated with transient nausea and gastrointestinal discomfort upon initiation or dose increase.

Δ Based upon reports of dose related QTc prolongation and arrhythmia, the maximum recommended dose of citalopram is 20 mg for patients at increased risk of elevated citalopram serum concentrations.

◇ Sertraline is associated with higher rates of diarrhea.

§ Agomelatine may be hepatotoxic and is contraindicated with any degree of liver impairment. Transaminase monitoring is required.

¥ May cause persistent dose-related increases in blood pressure (primarily diastolic) and heart rate. Monitor blood pressure regularly.

‡ Trazodone is associated rarely with priapism, which is considered a medical emergency. Refer to UpToDate topic on Serotonin modulators.

† Vilazodone is associated with higher rates of nausea, vomiting, and diarrhea.

** Caution: can cause liver failure. Not available in Europe, Canada, and several other countries.

•• Gastrointestinal forms of anticholinergic side effects include: dry mouth, constipation, epigastric distress, decreased esophagogastric tone. Refer to "Anticholinergic" data for frequency rankings.

Created with data from:

1. Nelson JC. Tricyclic and tetracyclic drugs. In: The American Psychiatric Publishing Textbook of Psychopharmacology, 4th ed, Schatzberg AF, Nemeroff CB (Ed), American Psychiatric Publishing, Washington, DC 2009. p.263.
2. Lexicomp Online. Copyright © 1978-2013 Lexicomp, Inc. All Rights Reserved.
3. Wenzel-Seifert K, Wittmann M, Haen E: QTc prolongation by psychotropic drugs and the risk of torsade de pointes. Dtsch Arztebl Int 2011; 108(41):687-93.
4. Serretti A, Chiesa A. Sexual side effects of pharmacological treatment of psychiatric disease. Clin Pharm Ther 2011; 89:142-7.
5. Howland RH. A benefit-risk assessment of agomelatine in the treatment of major depression. Drug Saf 2011; 34:709.

Table 1. FDA Approved Indications^{1-18,75,76}

Available Products	Depression	OCD	PD	GAD	SAD	PMDD	PTSD	Bulimia Nervosa	Seasonal Affect Dis	DPNP	Fibro-myalgia
Aplenzin (bupropion ER)	✓										
Celexa (citalopram)	✓										
Cymbalta (duloxetine)	✓			✓						✓	✓
Effexor (venlafaxine)	✓										
Effexor XR (venlafaxine ER)	✓		✓	✓	✓						
fluvoxamine		✓ _{>8}									
Lexapro (escitalopram)	✓			✓							
Luvox CR (fluvoxamine CR)		✓			✓						
maprotiline	✓										
Paxil (paroxetine)	✓	✓	✓	✓	✓		✓				
Paxil CR (paroxetine CR)	✓		✓		✓	✓					
Pexeva (paroxetine mesylate)	✓	✓	✓	✓							
Pristiq (desvenlafaxine)	✓										
Prozac (fluoxetine)	✓ _{>8 yr}	✓ _{>7}	✓					✓			
Remeron (mirtazapine)	✓										
Venlafaxine ER (tablets)	✓				✓						
Wellbutrin (bupropion)	✓										
Wellbutrin SR (bupropion SR)	✓										
Wellbutrin XR (bupropion ER)	✓								✓		
Zoloft (sertraline)	✓	✓ _{>6}	✓		✓	✓	✓				

OCD= obsessive compulsive disorder; PD= panic disorder; GAD= generalized anxiety disorder; SAD= social anxiety disorder; PMDD= premenstrual dysphoric disorder; PTSD= post traumatic stress disorder; DPNP=diabetic peripheral neuropathic pain.

http://www.bcbsil.com/pdf/pharmacy/rx_criteria/antidepressants.pdf

SSRIs for Adults

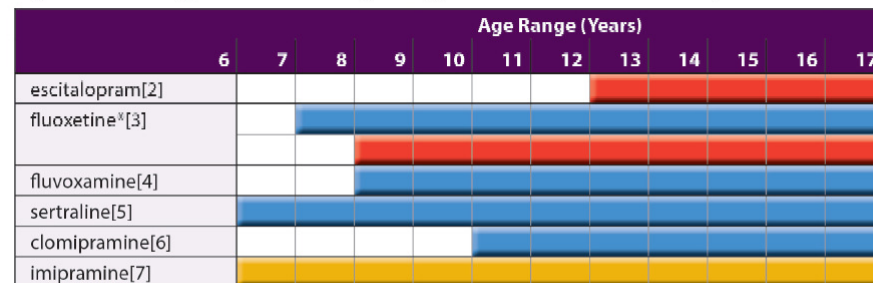
Table 7. Generically-available SSRIs, FDA Approved Indications and Unlabeled Uses

Indication	FDA-approved agents ¹⁻¹⁸	Accepted Unlabeled agents ³⁵⁻⁴⁴
Depression	citalopram, fluoxetine, paroxetine, sertraline, bupropion, venlafaxine	
OCD	fluvoxamine, fluoxetine, paroxetine, sertraline	citalopram ³⁹
PD	fluoxetine, paroxetine, sertraline	citalopram ^{35,37,39} , fluvoxamine ^{35,37,39}
GAD	paroxetine	sertraline ^{35,40,44}
SAD	paroxetine, sertraline	fluvoxamine ^{35,37,44}
PMDD	sertraline	citalopram ^{37,41} , fluvoxamine ⁴¹ , paroxetine ⁴¹
PTSD	paroxetine, sertraline	fluoxetine ^{7,37,42,43,44}
Bulimia	fluoxetine	fluvoxamine ³⁷

*OCD= obsessive compulsive disorder; PD= panic disorder; GAD= generalized anxiety disorder; SAD= social anxiety disorder or social phobia; PMDD= premenstrual dysphoric disorder; PTSD= post traumatic stress disorder.

http://www.bcbsil.com/pdf/pharmacy/rx_criteria/antidepressants.pdf

Figure 1. FDA-Approved Pediatric Age Ranges and Indications for Antidepressant Medications



childhood enuresis MDD OCD

*Fluoxetine is FDA approved for the treatment of MDD in pediatric patients up to 18 years old.

<http://www.cms.gov/Medicare-Medicaid-Coordination/Fraud-Prevention/Medicaid-Integrity-Education/Pharmacy-Education-Materials/Downloads/ad-pediatric-factsheet.pdf>

SSRIs for Children

TABLE 2 Pregnancy classification of SSRIs

Generic name	Trade name	Pregnancy classification
Citalopram	Celexa	C
Escitalopram	Lexapro	C
Fluoxetine	Prozac	C
Fluvoxamine	Luvox	C
Paroxetine	Paxil	D*
Sertraline	Zoloft	B
Venlafaxine	Effexor	C

* Changed from C to D after FDA advisory.

<http://contemporaryobgyn.modernmedicine.com/contemporary-obgyn/news/use-selective-serotonin-reupt>

TABLE 3 SSRI discussion checklist

- ☐ Discuss small risk of PNA; infant may require observation
- ☐ Discuss possible but small absolute risk of PPHN
- ☐ Risk of congenital anomalies not greater than baseline risk
- ☐ Stopping SSRIs during pregnancy can have serious consequences
- ☐ Stopping SSRIs prior to delivery not recommended
- ☐ Continue medication during breastfeeding
- ☐ Alert pediatrician to maternal SSRI use
- ☐ Consider not using paroxetine as a first-choice SSRI
- ☐ If using paroxetine, consider a fetal echocardiogram at 22-24 weeks
- ☐ Watch for postpartum depression
- ☐ Schedule a postpartum visit soon after delivery

Abbreviations: PNA, poor neonatal adaptation; PPHN, persistent pulmonary hypertension of the newborn

SSRIs in Pregnancy